

# **Exhibit 15**



9/8/00

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Assistant Commissioner of Patents  
Washington, D. C. 20231

By Express Mail article EK797321469US

Re: Patent Application of Brad A. Armstrong

Serial No.: 08/677,378 Filed: 07/05/96

Title: IMAGE CONTROLLERS WITH SHEET CONNECTED SENSORS  
(as amended)

Applicant's address: Brad A. Armstrong  
P.O. Box 1419  
Paradise, CA 95967

Patent Examiner: Brier, J. Art Unit: 2779

IN RESPONSE TO THE OUTSTANDING OFFICE ACTION OF 08/31/00

Sir:

REMARKS

This is responsive to the Office Action mailed 08/31/00, paper #20, regarding the above specified application wherein claims 38-60 are pending, and 38-43, 45-52, and 54-60 are rejected, and claims 44 and 53 are objected to.

A certificate of Express mailing is attached.

The consideration of this response, and the reexamination of the application and pending claims in view of this response is requested.

The entire Detailed Action of the 08/31/00 has been carefully read, including points 1-15.

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Point 1 has been read, and it is noted that the CPA is acceptable and has been established. Applicant notes that the original application number 08/677,378 and filing date are being used in reference to the CPA.

Point 2 is noted.

Point 3 has been read. Applicant will amend, under amendments below, the specification to include the rewritten priority claim as suggested by the Examiner. The Examiner's suggestion is appreciated. Thank you.

Point 4 has been read. Drawing Figure 37 is prior art and is labeled as such in the new substitute formal drawing included herewith. A Letter to the Official Draftsperson is also herewith included. Would the Examiner please be so kind as to properly route the substitute drawing so that it is the drawing used for the Patent publication. Thank you.

Regarding the issue of Fig. 38. Applicant understands that the Examiner may have perceived Fig. 38 as prior art from reading the first sentence starting on line 16 on page 39, but therein Applicant is only describing a "typical package body 600" meaning that the body of the Fig. 38 sensor may use a prior art style body, not meaning that the sensor of Fig. 38 is prior art, rather lines 17-29 assert that Fig. 38 is a novel sensor.

Figure 38 is NOT a prior art figure or device. In the specification, on page 39 lines 17-29, describes the sensor of Fig. 38 as being novel at least due to the inclusion of "an additional very important element" (line 17), being a "pressure sensitive electrical element 612" (line 20). Applicant does not admit Fig. 38 is prior art and in fact states on lines 27-29 "I believe that integration of pressure sensitive technology into a tactile-snap through sensor package is novel...".

Applicant has recently received a U.S. Patent on the novel sensor of Fig. 38, U.S. Patent 5,999,084 issued Dec. 7, 1999. A Copy of patent 5,999,084 is herewith included for the Examiner's convenience.

Point 5 is noted.

Point 6 has been read. Applicant will cancel claim 60 below under amendments, but Applicant does not admit claim 60 is not allowable because the Examiner's reasoning depends on the reliance of the "Fig. 38" sensor being prior art, which it is not as discussed above in response to point 4.

Point 7 has been read.

Point 8 has been read.

Point 9 has been read.

Points 10-13 have been read and Applicant again directs the Examiner's attention to the discussion of point 4 above and Fig. 38 not being prior art.

Point 14 noting the "Allowable Subject Matter" has been read and understood.

The Examiner states: "The prior art of record does not teach or suggest placing an input member movable in at least two axes and finger depressible buttons of claim 43/41/40/39/38 or claim 51/50/49/48 onto a flexible sheet."

Accordingly, in the Amendments below, the independent claim 38 (once amended) now includes the elements of claims 44/43/41/40/39/38, and also the independent claim 48 (once amended) now includes the elements of claims 53/51/50/49/48.

Point 15 has been noted.

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In the Aug. 4, 2000 amendment, Applicant stated in Remarks that he would cancel claims 19-37, but forgot to formally request cancellation of the claims under Amendments. It is noted the Examiner correctly understood Applicant's intention regarding claims 19-37 in his response of 08/31/00 by treating the claims as having been cancelled. For the sake of clarity, Applicant will formally cancel claims 19-37 below under Amendments for the record. Thank you.

AMENDMENTS

In the Specification:

Please rewrite the priority claim in the specification to read:

--This application is a continuation-in-part of U.S. Patent Application Serial No. <sup>07</sup> 108/847,619 filed on March 5, 1992, now U.S. Patent No. 5,589,828 and this application is a continuation-in-part of U.S. Patent Application Serial No. 08/393,459 filed on February 23, 1995, now U.S. Patent No. 5,565,891.--

Amendments to the claims:

Please cancel claims 19-37 per the above discussion.

The claim amendments will be made by way of underlining that which is being added, and bracketing "[ ]" around that which is being deleted.

Please amend claim 38 as follows.

1 <sup>38.</sup> (once amended) An image controller comprising:  
an input member with associated sensors, said input member moveable on at least two axes; and  
a plurality of finger depressible buttons with associated

sensors; and

at least one sheet structurally connecting, at least in part, to the sensors of said input member, and said at least one sheet structurally connecting, at least in part, to the sensors of said finger depressible buttons; said at least one sheet having

electrically conductive traces located on said at least one sheet, said electrically conductive traces electrically connecting with the sensors of said input member, and said electrically conductive traces electrically connecting with the sensors of said finger depressible buttons;

*b2*  
said image controller is connected to an image generation device;

at least one of the finger depressible buttons is structured with a resilient dome cap;

said resilient dome cap is structured to provide a tactile feedback to a human hand;

a pressure-sensitive variable sensor is the sensor associated with said at least one of the finger depressible buttons, whereby depression of said at least one of the finger depressible buttons provides a proportional signal representing the level of depressive pressure applied; said at least one sheet comprises

a flexible membrane sheet connected to a rigid circuit board sheet.

Please cancel claims 39-44.

Please amend claim 45 to read as follows.

*b3*  
2 45. (once amended) An image controller according to claim [43] ~~38~~ in which said plurality of finger depressible buttons are at least 10 in number, at least some of said buttons represent

*15*  
keys for numbers 1-9.

Please amend claim 48 to read as follows.

*5* 48. (once amended) An image controller comprising:  
an input member movable on at least two axes, said input  
member having associated sensors; and  
a plurality of finger depressible buttons, said finger  
depressible buttons having associated sensors; and  
at least one sheet connecting to the sensors of said input  
member, and said at least one sheet connecting to the sensors of  
said finger depressible buttons;  
said at least one sheet includes electrically conductive  
traces, said traces engaging the sensors;  
at least one of the finger depressible buttons is structured  
with a resilient dome cap;  
said resilient dome cap is structured to provide a tactile  
feedback to a human hand; said at least one sheet comprises  
a flexible membrane sheet connected to  
a rigid circuit board sheet.

*64*  
Please cancel claims 49-53.

Please amend claims 54-55 to read as follows.

*65* 54. (once amended) An image controller according to claim  
[53] *48* in which said at least one of the finger depressible  
buttons is associated with a pressure-sensitive variable sensor,  
whereby depression of said at least one of the finger depressible  
buttons provides a proportional signal representing the level of  
depressive pressure applied.

*7* 55. (once amended) An image controller according to claim  
[53] *48* in which said plurality of finger depressible buttons are  
at least 10 in number, at least some of said buttons represent

*55*

*8*

65

keys for numbers 1-9.

Please cancel claim 60.

Please insert the following new claims 61-72 presented for examination and allowance. Thank you.

12<sup>61</sup>. An image controller comprising:

an input member with associated sensors, said input member moveable on at least two axes; and

a plurality of finger depressible buttons with associated sensors; and

at least one sheet connecting to the sensors of said input member, and said at least one sheet connecting to the sensors of said finger depressible buttons;

said at least one sheet comprising at least a flexible membrane sheet.

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13<sup>62</sup>. An image controller according to claim 61 in which at least one of the finger depressible buttons is structured with a resilient dome cap.

14<sup>63</sup>. An image controller according to claim 62 in which said image controller is connected to an image generation device.

15<sup>64</sup>. An image controller according to claim 63 in which said image generation device includes a television based electronic game.

16<sup>65</sup>. An image controller according to claim 62 in which said resilient dome cap is structured to provide a tactile feedback to a human hand.

17<sup>66</sup>. An image controller according to claim 65 in which

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a plunger is positioned above said dome cap, said plunger comprising a non-conductive rigid plastic material.

19. An image controller according to claim 51 in which said at least one of the finger depressible buttons is associated with a pressure-sensitive variable sensor for providing a proportional signal, whereby depression of said at least one of the finger depressible buttons provides a proportional signal representing the level of depressive pressure applied.

19. An image controller according to claim 51 in which said at least one sheet comprises said flexible membrane sheet connected to  
a second sheet.

20. An image controller according to claim 58 in which said second sheet is a circuit board.

21. An image controller according to claim 58 in which said second sheet is a rigid membrane support structure.

22. An image controller according to claim 59 in which said at least one sheet comprises said flexible membrane sheet further supported by a third sheet, said third sheet is a rigid membrane support structure.

23. An image controller according to claim 21 in which said at least one of the finger depressible buttons is associated with a pressure-sensitive variable sensor for providing a proportional signal, whereby depression of said at least one of the finger depressible buttons provides a proportional signal representing the level of depressive pressure applied.

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REMARKS

No additional fees are required as the total number of independent and dependent claims is now the same as was paid for in the CPA filing of Aug. 4, 2000.

No new matter has been added with the now (once amended) claims 38/45/48/54/55, and no new matter has been added with the newly written claims 61-72. New claims 61-72 are believed to be within the scope of the recent CPA prior art search. The claim wording and concepts are fully supported in the originally filed specification.

Claims 61-72 are allowable over the prior art of record for the same reasoning once amended claims 38 and 48 are allowable.

Independent claims 38 and 48 have been amended by inclusion of the elements of their respective defendant claims, as suggested by the Examiner, (see above response to point 14, "Allowable Subject Matter"), thus bringing amended claims 38 and 48 into proper form for allowance.

Allowance of all pending claims is respectfully requested.  
Thank you.

Respectfully;

 Date: 7 September 2000

Brad A. Armstrong, Inventor / Applicant /Declarant

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Assistant Commissioner for Patents  
Washington, D. C. 20231

I hereby certify that this correspondence is being deposited with the United States Postal Service as EXPRESS MAIL article EK797321469US with sufficient postage paid in an envelope addressed to: Assistant Commissioner of Patents, Washington, D. C. 20231, on this

date: Sept. 7, 2000

 Brad A. Armstrong, Inventor / Applicant

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Assistant Commissioner for Patents  
Washington, DC 20231

Attn: Chief Draftsperson

Re: Patent Application of Brad A. Armstrong

Serial No.: 08/677,378 Filed: 07/05/96

Title: IMAGE CONTROLLERS WITH SHEET CONNECTED SENSORS  
(as amended)

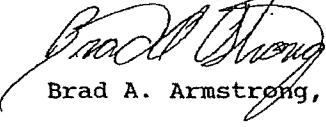
Applicant's address: Brad A. Armstrong  
P.O. Box 1419  
Paradise, CA 95967

Patent Examiner: Brier, J. Art Unit: 2779

Sir:

New formal drawing sheet 32 of 50 originally submitted for the above application is enclosed, corrected as required by the Patent Examiner to include the words "PRIOR ART" associated with Fig. 37. The sheet includes only drawing Figs. 37 and 38. Please substitute this sheet for the corresponding sheet on file.  
Thank you.

Respectfully,

  
Brad A. Armstrong, Inventor / Applicant

Date: 7 September 2000

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Brad A. Armstrong, Inventor / Applicant

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APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
DRAFTSMAN	

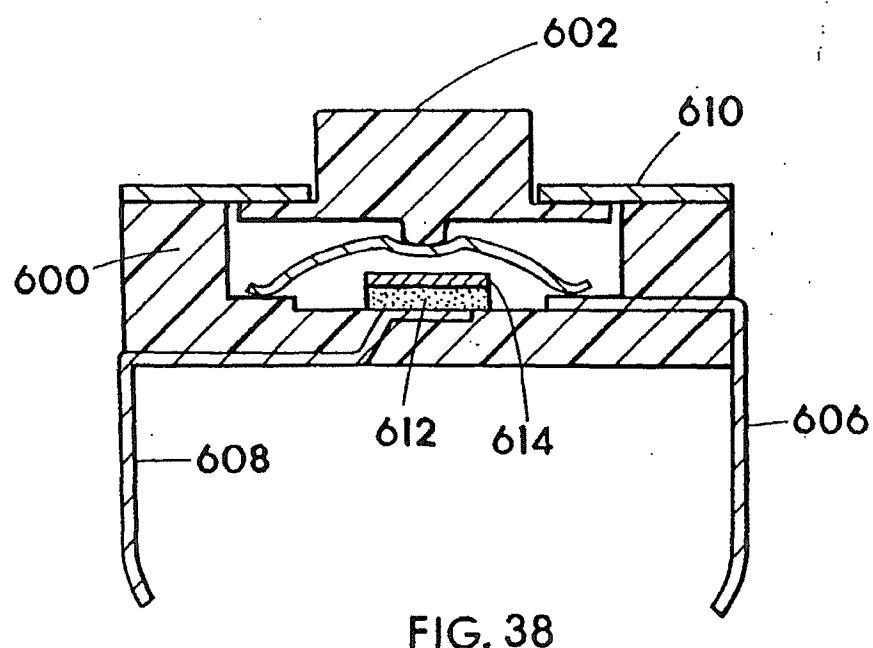
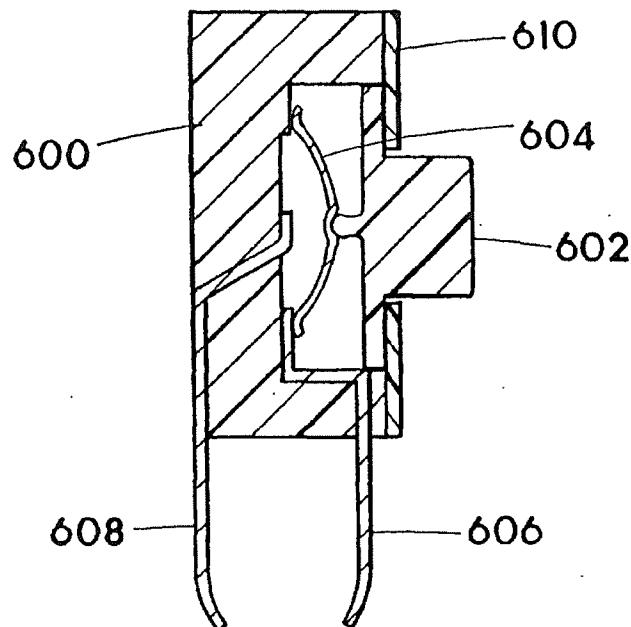




IMAGE CONTROLLERS WITH SHEET  
CONNECTED SENSORS (as amended)  
Brad A. Armstrong, Inventor  
Corrected drawing sheet 32 of 50  
(substitute for original)

Appl. Serial No. 08/677,378  
Filed: 07/05/96  
Examiner: Brier, J.  
GAU: 2779



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date: 17 September 2000

A handwritten signature in cursive ink that appears to read "Brad A. Armstrong".

Brad A. Armstrong, Inventor / Applicant

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